

Attorney's Docket No. 35140.002

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent application

of Bart D. Hibbs, Tyler MacCready, Phillip T. Tokumaru and
Thomas Zambrano Inventor(s)

for METHOD OF AND APPARATUS FOR WAVE ENERGY CONVERSION USING A FLOAT
WITH EXCESS BUOYANCY Title of invention

the specification of which is being transmitted herewith

OR

In re application of:

Serial No.: 0 / (to be assigned) Group No.:

Filed: Examiner:

For:

Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

CERTIFICATION UNDER 37 C.F.R. 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

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37 C.F.R. 1.8(a)

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37 C.F.R. 1.10

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TRANSMISSION

☐ transmitted by facsimile to the Patent and Trademark Office.

Date: August 9, 2001

Signature

Tony D. Chen, Esq.

(type or print name of person certifying)

(Information Disclosure Statement [6-1]—page 1 of 8)

J1036 U.S. PTO
09/928038
08/09/01

NOTE: "An information disclosure statement shall be considered by the Office if filed by the applicant:

- (1) Within three months of the filing date of a national application;
 - (2) Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or
 - (3) Before the mailing date of a first Office action on the merits, whichever event occurs last."
- 37 C.F.R. 1.97(b).

NOTE: "Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section." 37 C.F.R. 1.56(a).

"Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) each inventor named in the application;
- (2) each attorney or agent who prepares or prosecutes the application; and
- (3) every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application." 37 C.F.R. 1.56(c).

NOTE: The "duty as described in § 1.56 will be met so long as the information in question was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b) - (d) and 1.98 before issuance of the patent." Notice of January 9, 1992, 1135 O.G. 13 -25 at 17.

WARNING: "No information disclosure statement may be filed in a provisional application." 37 C.F.R. § 1.51(b).

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

(check sections forming a part of this statement; discard unused sections
and number pages consecutively)

1. ☒ Preliminary Statements
2. ☒ FORM PTO-1449 (PTO/SB/08A and 086)
3. ☐ Statement as to Information Not Found in Patents or Publications
4. ☐ Identification of Prior Application in Which Listed Information Was Already Cited
and for Which No Copies Are Submitted or Need Be Submitted
5. ☒ Cumulative Patents or Publications
6. ☐ Copies of Listed Information Items Accompanying This Statement
7. ☐ Concise Explanation of Non-English Language Listed Information Items
 - 7A. ☐ EPO Search Report
 - 7B. ☐ English Language Version of EPO Search Report
8. ☐ Translation(s) of Non-English Language Documents
9. ☐ Concise Explanation of English Language Listed Information Items (Optional)
10. ☒ Identification of Person(s) Making This Information Disclosure Statement

(complete the following, if appropriate)

Sections 1, 2, 5, 10, respectively, have been continued on ADDED PAGE(S).

NOTE: "Once the minimum requirements are met, the examiner has an obligation to consider the information." Notice of April 20, 1992 (1138 O.G. 37-41, 37).

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No: 35140.002

In the Patent Application of:

Inventors: Bart D. Hibbs, Tyler MacCready,
Phillip T. Tokumaru and Thomas Zambrano

For: **METHOD OF AND APPARATUS FOR WAVE ENERGY
CONVERSION USING A FLOAT WITH EXCESS
BUOYANCY**

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INFORMATION DISCLOSURE STATEMENT--37 CFR 1.97(b)

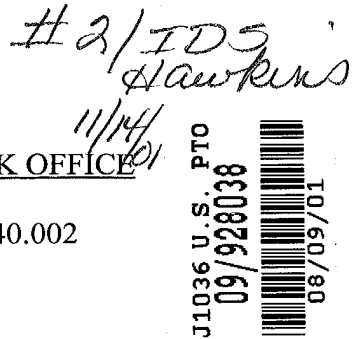
TO THE ASSISTANT COMMISSIONER FOR PATENTS

Washington, D.C. 20231

Sir:

Come now the applicants, Bart D. Hibbs, Tyler MacCready, Phillip T. Tokumaru and Thomas Zambrano, and pursuant to the guidelines promulgated by the Patent and Trademark Office published in Section 609 of MPEP and pursuant to 37 CFR 1.97(b), state that at the time of filing the application on their invention, they were aware of the following prior art:

1. United States Patent No. 2,501,696 issued to E. Souczek on March 28, 1950 for "Stream Turbing" (hereafter the "Souczek Patent");



2. United States Patent No. 3,209,156 issued to A. D. Struble, Jr. on September 28, 1965 for "Underwater Generator" (hereafter the "Struble Patent");
3. United States Patent No. 3,965,364 issued to Gustafson et al. on June 22, 1976 for "Wave Generator" (hereafter the "Gustafson Patent");
4. United States Patent No. 4,045,148 issued to Morin on August 30, 1977 for "Turbing" (hereafter the "Morin Patent");
5. United States Patent No. 4,383,182 issued to Bowley on May 10, 1983 for "Underwater Power Generator" (hereafter the "Bowley Patent");
6. United States Patent No. 4,748,808 issued to Hill on June 7, 1988 for "Fluid Powered Motor-Generator Apparatus" (hereafter the "Hill Patent");
7. United States Patent No. 4,850,190 issued to Pitts on July 25, 1989 for "Submerged Ocean Current Electrical Generator And Method For Hydrogen Production" (hereafter the "Pitts Patent");
8. United States Design Patent No. Des.261,639 issued to Robinson on November 3, 1981 for "Water-Driven Electricity Generator" (hereafter the "Robinson Design Patent"); and

- 1 9. PCT Patent Publication No. WO 99/20896 published on April 29, 1999 for
2 "Method and Arrangement for Converting Kinetic Energy of Ocean
3 Currents into Rotary Energy" (hereafter the "PCT Publication").
4

5 The Souczek Patent disclosed a stream turbine device. The device includes a an
6 underwater carrier wing structure connected to the stream turbine and adapted to create
7 dynamic buoyancy. The underwater carrier wing structure is connected to one and of an
8 elongated holding device. The other end of the holding device is anchored at the
9 botThomas of the water course.
10

11 The Struble Patent disclosed an underwater generator unit. The unit includes a
12 body portion having waterproofed stator elements mounted in the exterior surface of the
13 body portion. The unit also includes a shaft for rotatively securing an impeller assembly.
14
15

16 The Gustafson Patent disclosed a device for utilizing energy stored in wave
17 motion. The device includes a buoyant body on the water surface is anchored so as to
18 permit free, unrestricted vertical movement when acted upon by a heaving wave. An
19 energy collecting device is connected to the buoyant body and located at a depth where
20 the water is not subjected to the vertical wave motion.
21
22

23 The Morin Patent disclosed a turbine with a water-driven motive element adapted
24 for being immersed in a body of water. The motive element includes a disc having a
25 density close to that of the water in which it is immersed. The disc is horizontally
26 disposed and has a plurality of cells containing a mixture of liquid and gas and the disc
27 carries on the upper and lower surfaces thereof a plurality of blades which are pivotably
28

1 movable about a horizontal axis. Each blade has one or more pocket containing a
2 mixture of gas and a liquid such that the density of the blades connected to the upper
3 surface of the disc is less than that of water and the density of the blades connected to the
4 lower surface of the disc is greater than that of water. The disc carries a structure which
5 holds the blades in one direction of pivotal movement when the blades reach a vertical
6 position. Under the action of water current, the blades are driven to their vertical position
7 and effect rotation of the disc, which serves to drive an electrical generator system.
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9

10 The Bowley Patent disclosed an apparatus and method for generating electrical
11 power. The apparatus includes a plurality of power producing modules disposed in a
12 substantially constant velocity ocean current. The method includes the steps of
13 mechanically coupling the output of the modules to drive a single electrical generator.
14
15

16 The Hill Patent disclosed a fluid powered motor-generator apparatus. The
17 apparatus includes a generator having a power output and a mechanically driven input.
18 The generator has a generally streamlined motor body rotatably mounted to drive the
19 generator input. The motor has a plurality of radially extending generally V-shaped fins
20 mounted on an outside surface thereof. The fins are mounted on brackets above an outer
21 surface of the motor body and have a convex pointed side facing in the direction of
22 rotation and a concave open side facing in a direction opposite to the direction of
23 rotation. As a result, the action of a stream of fluid on the fins tends to rotate the motor
24 the motor body and drive the generator. If the motor-generator apparatus is mounted in
25 water, the generator can be enclosed in another streamlined body which is anchored to
26 the bed of the body of water. A third streamlined motor body can be attached to the
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28

1 botThomas of the generator body with a plurality of radially extending fins oriented to
2 cause it to rotate opposite to the direction of rotation of the first streamlined motor body.
3

4 The Pitts Patent disclosed a system and method for generating chemical energy
5 from ocean current energy. The system includes a unique suspension system having a
6 support cable submerged below the ocean surface in an isolation zone remote from the
7 adverse influences of storms and hurricanes. The support cable is submerged by a first
8 anchor which includes guys, buoyancy chambers and guy anchors. A second anchor is
9 provided by generator cable assemblies which suspend a plurality of electric energy
10 generating units and are anchored by means of suspension anchors. Buoyancy provided
11 by modules exert a buoyancy on the suspension system and provides that the basic
12 components of the suspension system essentially support their own weight. In this
13 manner, little or no weight is exerted on support cable by the anchors and generating
14 units suspended. In a preferred embodiment, the generating units are arranged in a
15 matrix of vertical and horizontal rows across the width and along the depth of the ocean
16 current.
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20 The Robinson Design Patent disclosed a water-driven electricity generator.
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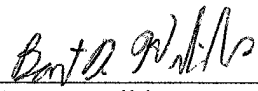
23 The PCT Publication disclosed a method and arrangement for converting kinetic
24 energy of ocean currents into rotatory energy. The arrangement includes one or more
25 turbines which is arranged to extend substantially vertically from a buoy anchored in
26 such a way in an ocean current that it cannot rotate with the turbine and driving an
27 electric generator or another rotary machine. At the botThomas of the turbine, a
28 counterweight is provided to retain the turbine substantially vertically at normal speed of

1 the ocean current but to permit it to assume an inclined position when subjected to
2 temporarily increased current speeds, thereby protecting the turbine form harmful
3 flexural stresses and protecting the rotary machine from being overloaded.

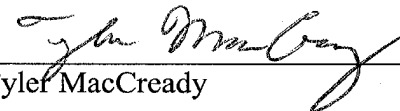
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5 Each of the above-referenced patents is discussed in the background of the
6 invention section of the Patent Application.

7 Respectfully submitted,

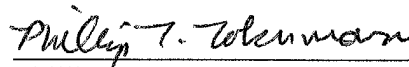
8 Dated: 8/3/2001

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10 Bart D. Hibbs

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12 Dated: 7/25/01

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14 Tyler MacCready

15 Dated: 7-25-01

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17 Phillip T. Tokumaru

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19 Dated: 7-25-01

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21 Thomas Zambrano

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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

1449A/PTO Rev. 10/95				U.S. Department of Commerce Patent and Trademark Office		Complete if Known	
LIST OF PRIOR ART CITED BY APPLICANT <i>(use as many sheets as necessary)</i>						Application Number	
						Filing Date	
						First Named Inventor	Bart D. Hibbs
						Group Art Unit	
						Examiner Name	
Sheet	1	of	1	Attorney Docket Number	35140.002		

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Examiner Signature	Date Considered	
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Signature _____

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two -letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.1⁶ if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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